



The Ohio Ballet will perform this fall as part of the Performing Arts Series

## A little culture: Performing Arts Series to begin

By NANCY SZAKACS  
Staff Writer

The 1988-89 Performing Arts Series promises to offer events that the Carolina Union describes as an international "cultural feast."

The Ohio Ballet opens the series Oct. 13, directed by Heinz Poll. The focus of the group, according to Poll, is to combine strong classical technique with contemporary style.

The Broadway comedy and screen hit, "Little Shop of Horrors," comes Nov. 9. This wacky musical provides ingenious plot twists and inventive surprises with the man-eating plant known as Audrey II. It is being staged by Daedalus Productions.

The Chicago-based Hubbard Street Dance Company arrives Jan. 20 for a performance that incorporates the grace of ballet and the explosive energy of jazz and rhythmic tap.

For classical music-minded individuals, the Budapest Symphony Orchestra with Leonard Pennario performs Feb. 13. This program provides an evening that includes such pieces as Khachaturian's Concerto for piano and orchestra, Tchaikovsky's Symphony No. 5 in E minor and Mendelssohn's Symphony No. 4 in A major.

Also in February, the Music Theatre Associates production of "My One and Only" will be shown the 27th. The Chicago Tribune notes that

these Gershwin songs, along with the direction and choreography of Tommy Tune, make this performance "la creme de la creme" of music and dancing.

"The sound of the Tokyo String Quartet is like fine Japanese silk made audible," is what Newsweek magazine said about the ensemble that will perform chamber music on March 5.

As an added bonus, Ntosake Shang's "For Colored Girls Who Have Considered Suicide When the Rainbow is Enuf," a celebration of being a black woman, will be performed Jan. 21. The New York Times has described the show as "extraordinary and wonderful."

The series of performances will be held in Memorial Hall and season passes for the shows are on sale.

Season tickets for the six-show series are \$65 for UNC students, \$75 for senior citizens and Union Privilege card holders, and \$80 for general public admission.

Season ticket holders can purchase seats for the bonus performance "For Colored Girls..." at \$5 for UNC students and \$7 for the general public and senior citizens. Individual tickets for the show are \$10.

For more information on cultural festivities of the performing arts, call the Carolina Union Box Office at 962-1449 weekdays between noon and 2 p.m.

## Seashells may aid medical, electronic technology

Editor's note: This is the first of a new DTH feature focusing on scientific trends that will appear on Thursdays.

By ANDREW THOMPSON  
Science Writer

Knowledge of how seashells are formed may help in the treatment of bone damage and in the production of specialized crystals in the electronic industry.

The incorporation of inert minerals into living tissues to form a tougher material is an impressive feat of nature. In humans, this process of biomineralization is used to build bones and teeth. Bones are formed when soft and flexible cartilage and collagen tissue is impregnated with the mineral calcium phosphate. However, details of the process remain obscure because calcium phosphate has too complex a meta-

### Science Report

bolism to be studied easily.

Scientists have turned to how seashells such as mussels are formed, which is an analogous, though more accessible, process. Seashells are made from calcium carbonate, or chalk, and it is the unique structure of these crystals in a living animal that is of special interest to the scientists.

Stephen Mann and his colleagues at the University of Bath, England, have set up an artificial equivalent of the initial stages of seashell biomineralization (as reported in last week's issue of Nature magazine).

They investigated the formation of calcium carbonate crystals in the presence of stearic acid. Stearic acid,

also found in soap, is a long-chain carbon molecule that, in this experiment, represented the wall of an animal cell. Without the stearic acid, a solution of calcium carbonate will form cuboidal crystals known as calcite. However, in the presence of stearic acid the calcium carbonate forms a differently structured crystal, vaterite. The scientists found this was due to the shape of the stearate molecule *vis-a-vis* the carbonate ion.

By manipulating the structure and the properties of the stearic acid, they could change the structure of the crystals. In a similar fashion, mussels determine the structure of the crystals in their shells.

"This is very exciting work," said UNC professor Miles Crenshaw, who pioneered this type of research in 1972. "After many years of stagnation the field has suddenly taken off."

Crenshaw, joint professor in the

departments of Dentistry and Marine Sciences, did have some reservations about Mann's latest work. "The basic question is that in the initial stages the tendency of these (super-saturated calcium carbonate) solutions is for them to form vaterite anyway."

If this is the case, the presence of the stearate molecule may be less essential than Mann reports.

Despite this criticism, Crenshaw is optimistic about the medical and technological applications of this research. In fact, it is likely that Mann's study will dovetail with Crenshaw's own work.

This work, still at an early stage, is an investigation of how the process of healing damaged bone can be promoted by artificial intervention. The crushed bone, say from a skull injury, will first be cut out. Then sheets of hydrogel, an artificial

molecule-containing carbon ("like jello, only stronger," Crenshaw says) will be placed over the injury.

The hydrogel will act as a "seed" that then can be naturally mineralized by the calcium phosphate in the surrounding fluid. Not only will this quicken the healing process, but it will also make it possible to direct where the bone grows.

Although Crenshaw to date has only worked in artificial conditions, he is quick to pay homage to the sea animals who helped. "Progress in the field has not been made with bones and teeth but by looking at the process of shell formation."

Apart from the medical applications, the study of biomineralization may have an impact on the engineering of specialized electronic crystals.

Because all the layers of these crystals are oriented in a single

direction, they generate a small electrical current when pressure is applied. The crystals are used in many technological devices. Electroactive sensors, which measure the stress in constructions, use the crystals to detect any undue change in pressure. Similarly, a record player has a crystal in its stylus. The crystal varies its electrical current as it rides over the bumps and ridges of the record groove.

The most efficient way of producing these crystals will be by mimicking biomineralization. Unlike the older methods, such as vapor deposition, it will now be possible to produce larger crystals, as well as a greater variety of types.

Some science writers have even speculated that it will be possible to develop mussels that will make the crystals for us.

## Health conscious? Area businesses cater to natural food needs

By KATHY PETERS  
Staff Writer

College students who prefer miso to McDonald's and fresh fruit to french fries can feel right at home in Chapel Hill.

Health food resources may not be as plentiful as fast food joints, but several area restaurants and grocery stores cater to the natural taste.

One of the newest is Weaver Street Market, which opened June 21 to please what manager Ruffin Slater calls an "underserved market." Its shelves in Carr Mill Mall are stocked with goat's milk, yogurt, WASA bread, sugarless candy bars and leeks.

Near the leeks are organically grown grapes, with a sign above them telling customers the products are organically grown and that the store supports the boycott on California grapes, which often contain herbicides and pesticides.

The all-natural food store is the only full-fledged health food store in Chapel Hill. Wellspring Grocery in Durham and Sunrise Grocery, eight miles away from Chapel Hill on N.C. 86, are the closest similar stores.

Set up as a supermarket, Weaver Street has a seafood section, bakery, beauty product section, a whole shelf of vitamins and a deli that sells fish and organic chicken. The market will sell magazines, books and newspapers soon, Slater says. It also has a large variety of imported beers and beer-brewing equipment that its customers can rent.

Slater estimates that students comprise 20 percent of Weaver Street's clientele. "A lot of students

who live in dorms probably eat in the campus dining halls," Slater says. "Whether a student shops here has more to do with if a student shops for groceries."

Southern Season, in Eastgate Shopping Center, caters to both health food buffs and gourmets. It carries grain and fiber products, cheese, coffee, chocolate, wine and other groceries. It also has a luncheon cafe that can serve 60 people.

Well-known by health-conscious students are Pyewacket Restaurant, at 431 W. Franklin St., and the Sunshine Cafe, across the street at 454. Both restaurants' menus are mainly vegetarian.

### Teague

Glenn Stuart, who was moved from Teague by the decision, called the change inevitable but said he preferred Teague as an all-male residence hall.

"If I still lived there and it was coed, I wouldn't want to stay," he said.

Some female Teague residents said many Teague alumni are surprised by the coed status of the hall when they visit UNC. But the female students said they enjoy living in Teague, and some have expressed a desire to stay in the hall next year.

"The reputation of Teague has probably calmed down a bit," Jene Cox said. "It still feels like a big family here, though."

The RHA reports no further protests by students concerning the decision, which inconvenienced them

Pyewacket caters to the health-conscious with foods that are low in salt, contain no preservatives and are made of fresh ingredients. Chefs make the pasta and use soy oil to fry most of the fried entrees. Most of the entrees are vegetables; fresh seafood dishes are the only exception.

According to manager Pam Patterson, one-fourth to one-third of Pyewacket's clientele is students. "We're just getting the students back (for the fall semester), so it's hard to tell," Patterson says.

Senior Carrie Serwetnyk, a member of the women's soccer team, is a self-proclaimed health

food addict. Although she eats at Pyewacket often, she says many other restaurants in Chapel Hill are becoming aware of health-conscious students.

"Even the little places like the Hardback Cafe and the Looking Glass Cafe have healthy food," she says.

Serwetnyk is not a strict vegetarian, but she rarely eats any meat. Dispelling the popular belief that vegetarians and other health-food eaters have a tough time finding their greens, Serwetnyk says her culinary choices aren't too limited in Chapel Hill.

"It's just a choice. There are a lot

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in a number of ways, Randolph said. The most common protest about the decision was over the lack of student involvement. Teague leaders were requested to investigate the incidents, but when no one was found responsible, the housing department made the decision independently, he said.

Although the Division of Student Affairs plans to evaluate the new

### Adler

opment Center, is acting director of the UNC center. She is promoting the implementation of the program through publications, training and research.

status of Teague and reserves the right to change it, Randolph said he is worried the Teague decision set a precedent that could result in similar rulings in other situations.

"I hope it emphasizes one more time the importance of getting student input before the policies are made, making us a part of that process," he said.

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of opportunities in Chapel Hill to find health foods."

She does have difficulties finding what she wants at local grocery stores, but now sees Weaver Street Market as a new option.

And although Serwetnyk isn't as strict with her diet as some, she has fewer problems finding health foods than she did a few years ago.

"It's a lot easier now because this new mind-set is hurrying across America," Serwetnyk says.

Jo Johnson, customer service representative at American Natural Foods Inc. on Estes Drive, has seen that trend. "The market is growing in that a lot of the traditional natural foods are being marketed toward

the gourmet customer," she says. American Natural Foods supplies stores and restaurants with specialty condiments made with the Japanese high-protein food paste called miso.

Slater, at Weaver Street Market, sees the local market also broadening to include older people under doctor's orders and people who are limiting their salt intake.

Serwetnyk attributes this broadening to the fitness craze of a few years ago.

"Even fast food is adapting to this consciousness," she says. "Some of the fast food chains are seeing that there is a market for this salad thing. Salad and hamburgers are both trendy."

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